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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/491,320	01/26/2000	Edward R. Wilcox	MA-32CFD1	8391

23557 7590 11/20/2001

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EXAMINER

FRONDA, CHRISTIAN L

ART UNIT	PAPER NUMBER
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1652

DATE MAILED: 11/20/2001

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/491,320

Applicant(s)
Wilcox et al.

Examiner
Christian L. Fronda

Art Unit
1652



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other:

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DETAILED ACTION

1. Claims 1-15 are under consideration in this Office Action.

Claim Rejections - 35 U.S.C. § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-5 and 7-15 are again rejected under 35 U.S.C. 102(e) as being anticipated by Fraser *et al.* (US 4,870,023) as stated in the previous Office Action dated 8/16/2000.

Applicants' arguments filed on August 27, 2001 (Paper No. 10), have been fully considered but they are not persuasive. Applicants argue that the '023 patent does not teach the claimed invention and that it fails to suggest using a "receptor-targeting protein" to deliver toxins.

As stated in the previous Office Action, claims 1-5, and 7-15 are anticipated by Fraser *et al.* since Fraser *et al.* teach a polyhedrin fusion protein comprising a portion of the polyhedrin protein fused to a foreign amino acid sequence (see entire patent and claim 1); the nuclear polyhedrosis virus polyhedrin protein portion is fused to the heterologous peptide by an amino acid linker (see entire patent and column 22, line 50 to column 25, line 68); and the foreign gene for use with the system include endotoxins of insect pathogens such as the *Bacillus thuringiensis* endotoxin (see entire patent and column 39, line 54 to column 40, line 48), diphtheria toxin (see column 38, lines 53-68), and "enzymes, enzyme inhibitors, insect hormone antagonists, neurotoxins, metabolic inhibitors, insect chemattractants, endotoxins of other insect pathogens" (see column 40, lines 8-42).

The claims do not recite and are not limited to a "receptor-targeting protein". Hence, the reference teachings of the '023 patent anticipate the claimed invention.

Claim Rejections - 35 U.S.C. § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-15 are again rejected under 35 U.S.C. 103(a) as being unpatentable over in Pennock *et al.* in view of Barnes *et al.*, Gelfand *et al.*, Stripe *et al.*, and Knowles *et al.* as stated in the previous Office Action dated 8/16/2000

Applicants' arguments filed on August 27, 2001 (Paper No. 10), have been fully considered but they are not persuasive. Applicants argue that the '023 patent does not teach the claimed invention and that it fails to suggest using a "receptor-targeting protein" to deliver toxins. Applicants argue that the references do not provide motivation to make the claimed invention.

The claims do not recite and are not limited to a "receptor-targeting protein". It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a pesticidal protein toxin according to claims 1-15 by modifying the teachings of Pennock *et al.* in the following manner: insert the DNA encoding diphtheria toxin taught by Gelfand *et al.*, or the crystal toxin of *Bacillus thuringiensis* var. *kurstaki* HD73 taught by Barnes *et al.*, or any of the ribosome-inactivating proteins taught by Stripe *et al.* into the vector taught by Pennock *et al.* which includes a peptide linker of four or less amino acids by methods well known in the art; and express the pesticidal protein toxin in *E.coli* as taught by Pennock *et al.*

One of ordinary skill in the art would be motivated to make the pesticidal protein toxin according to claims 1-15 because of the advantages of temporal regulation of expressing cytotoxic gene products as taught by Pennock *et al.* and for developing effective and environmentally acceptable pesticides as taught by Barnes *et al.* Since it is commonly known in the art that lysine is subject to proteolytic degradation, it would have been obvious to one of ordinary skill in the art to eliminate this amino acid in the peptide linker. Hence, the combined teachings of Pennock *et al.* in view of Barnes *et al.*, Gelfand *et al.*, Stripe *et al.*, and Knowles *et al.* make obvious the claimed invention.

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Conclusion

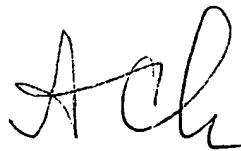
6. No claim is allowed.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian L. Fronda whose telephone number is (703)305-1252. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy, can be reached at (703)308-3804. The fax phone number for this Group is (703)308-0294. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1600 receptionist whose telephone number is (703)308-0196.

CLF


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